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EXAMINER	
BRADLEY, CHRISTINA	
ART UNIT	**PAPER NUMBER**
1654	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/500,822	ARBIT ET AL.	
	Examiner	Art Unit	
	Christina Marchetti Bradley	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *59-131* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *59-131* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/07/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's arguments regarding the lack of unity of invention are persuasive. The requirement for election/restriction is withdrawn. Claims 59-131 are pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 59-78, 88-101, 106, 108-116 and 119-131 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. To provide evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of compete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof.

4. Claims 59-78, 88-101, 106, 108-116 and 119-131 are drawn to an oral dosage form comprising unmodified insulin that achieves a therapeutically effective reduction in blood glucose. The specification discloses the complete structure of an insulin delivery agent, the formula recited in claim 79. The specification does not disclose any additional examples of delivery agents. The specification fails to disclose the complete or partial structure or

chemical/physical properties of any additional delivery agents, or guidance on how to obtain specific delivery agents. Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed genus. Therefore, only oral dosage forms of insulin comprising the delivery agents recited in claim 79, but not the full breadth of the claims, meet the written description provision of 35 U.S.C. §112, first paragraph.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 59-91 are rejected under 35 U.S.C. 102(e) as being anticipated by Weidner *et al.* (WO 02/02509). Weidner *et al.* teach a solid oral delivery capsule comprising zinc human , recombinant insulin and 4-[(4-chloro, 2-hydrozybenzoyl)amino]butanoic acid and a method of administering the composition to diabetic monkeys (see Example 1g on page 20 for capsule preparation and Example 2 on pages 22-24 for delivery), satisfying the structural limitations of claims 59-72, and 76-89. Regarding claims 73-75, the dose of insulin is 0.25-0.5 mg insulin/kg of monkey. The monkeys ranged in weight from 2-3 kg. Thus, the total dose of insulin was 0.75-1.5 mg, which is about 2, 3.8 and 5.75 mg. Regarding claims 90 and 91, the dose of 4-[(4-chloro, 2-hydrozybenzoyl)amino]butanoic acid is 25, 50 or 100 mg/kg of bodyweight. Thus the

total dose was 50-300 mg of 4-[(4-chloro, 2-hydrozybenzoyl)amino]butanoic acid which falls within the range in claims 90 and 91.

7. Weidner *et al.* do not teach that the oral dosage form of insulin is suitable for human use or the specific effects of administration recited in claims 59-62, 64-69, 76-78 or 85-89. Because the chemical structure of the oral solid dosage form of insulin taught by Weidner *et al.* is identical to the claimed invention, there is a reasonable expectation that the species would meet these additional functional limitations. The discovery and characterization of properties of a known material do not make it novel (see MPEP § 2112). Furthermore, there is no requirement that a person of ordinary skill in the art would have recognized the inherent disclosure at the time of invention, but only that the subject matter is in fact inherent in the prior art reference (see MPEP § 2112).

8. If the composition is physically the same, it must have the same functional properties. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990) See MPEP § 2112.01. Examiner cannot however determine whether or not the oral solid dosage form of insulin taught by Weidner *et al.* inherently possesses properties which anticipate or render obvious the claimed invention but has basis for shifting the burden of proof to applicant as in In re Fitzgerald, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 92-131 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weidner *et al.* (WO 02/02509). Weidner *et al.* teach a solid oral delivery capsule comprising zinc human recombinant insulin and 4-[(4-chloro, 2-hydrozybenzoyl)amino]butanoic acid and a method of administering the composition to diabetic monkeys (see Example 1g on page 20 for capsule preparation and Example 2 on pages 22-24 for delivery). Weidner *et al.* do not teach the administration of the solid oral dosage form of insulin to human diabetic patients. It would have been obvious to one of ordinary skill in the art to administer the oral solid dosage form of insulin taught by Weiner *et al.* to human diabetic patients. The skilled artisan would have been motivated to do so given that Weidner *et al.* teach that the solid oral dosage of 4-[(4-chloro, 2-hydrozybenzoyl)amino]butanoic acid and insulin decreases the mean peak blood glucose level in monkeys (Table 1A). There would have been a reasonable expectation of success given that monkeys are a predictable model for humans.

11. Regarding claims 93, 110 and 111, it would have been obvious to administer the drug on a chronic basis because diabetes is a chronic disease. Regarding claims 96 and 106, the dose of

insulin taught by Weidner *et al.* is 0.25-0.5 mg insulin/kg of monkey. The monkeys ranged in weight from 2-3 kg. Thus, the total dose of insulin was 0.75-1.5 mg, which is about 2 or 3.8 mg. It would have been obvious to further optimize the dosage of the insulin in the formulation. Section 2144.05 of the MPEP states: "Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. '[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.' *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)." Regarding claim 100, the dosage form is solid. Regarding claim 101, the dosage form is a capsule. Regarding claims 106 and 107, the dose of 4-[(4-chloro, 2-hydrozybenzoyl)amino]butanoic acid is 25, 50 or 100 mg/kg of bodyweight. Thus the total dose is 50-300 mg of 4-[(4-chloro, 2-hydrozybenzoyl)amino]butanoic acid, which falls within the range 1 to 800 mg and 100 to 600 mg. Regarding claim 108, the administration occurred without administration of a meal. Regarding claims 109 and 119, the insulin was recombinant human insulin.

12. Weidner *et al.* do not teach the specific effects of administration recited in claims 92-131. Because the chemical structure of the oral solid dosage form of insulin, the active method steps and the patient population (diabetics) taught by Weidner *et al.* are identical to the claimed invention, there is a reasonable expectation that the species would meet these additional functional limitation. The discovery and characterization of properties of a known material do not make it novel (see MPEP § 2112). Furthermore, there is no requirement that a person of

ordinary skill in the art would have recognized the inherent disclosure at the time of invention, but only that the subject matter is in fact inherent in the prior art reference (see MPEP § 2112).

13. If the composition is physically the same, it must have the same functional properties. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990) See MPEP § 2112.01. Examiner cannot however determine whether or not the oral solid dosage form of insulin taught by Weidner *et al.* inherently possesses properties which anticipate or render obvious the claimed invention but has basis for shifting the burden of proof to applicant as in In re Fitzgerald, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112.

14. Thus, the invention as a whole was clearly *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Double Patenting

15. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

16. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned

with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

17. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. Claims 92-131 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-29, 33-38 and 40-59 of copending Application No. 10/541,433. Although the conflicting claims are not identical, they are not patentably distinct from each other. Specifically, claims 6 and 11 of copending Application No. 10/541,433 recite a method of administering an oral solid formulation of insulin and 4-CNAB (4-[(4-chloro, 2-hydrozybenzoyl)amino]butanoic acid) (claim 11) to human diabetics (claim 6) at bedtime. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

19. Claims 59-131 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-92 of copending Application No. 11/072,941. Although the conflicting claims are not identical, they are not patentably distinct from each other. Specifically, copending Application No. 11/072,941 claims 65 and 74 each recite an oral tablet formulation of insulin and (4-[(4-chloro, 2-hydrozybenzoyl)amino]butanoic acid. Copending Application No. 11/072,941 claims 83 and 87 recite a method of administering this composition to diabetics. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

20. Claims 59-131 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 35-39, 42-45, 50, and 55-63 of copending Application No. 11/204,778. Although the conflicting claims are not identical, they are not patentably distinct from each other. Specifically, copending Application No. 11/204,778 claims

42 and 45 each recite an oral tablet formulation of insulin and (4-[(4-chloro, 2-hydrozybenzoyl)amino]butanoic acid. Copending Application No. 11/204,778 claims 57-63 recite a method of administering this composition to diabetics. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

21. No claims are allowed.
22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Marchetti Bradley whose telephone number is (571) 272-9044. The examiner can normally be reached on Monday through Friday, 8:30 A.M. to 5:00 P.M.
23. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on (571) 272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
24. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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